UPPER PALAEOZOIC FOSSILS FROM THE NORTH-WEST PORTION OF THE GILGIT AGENCY, PAKISTAN

by

J.M. Dickins.

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INTRODUCTION.

The fossils were collected by D. M. Traves, a member of a party of three Australian Geologists (Ivanac, Traves and King, 1951) who visited Pakistan in 1951.

Collections were made at the following localities:-

1. Darband Village, 3 miles north of Darkot, Yasin Valley, Specimens No. 92-109.

2. Sandhi Village, 7 miles north of Yasin, Yasin Valley, Specimens No. 110-122, 186 and 187.

3. Khaibar Village, junction of Khaibar Nalla and Hunza River, Specimens No. 58-69.

A preliminary examination and report on the fossils has been made by Dr. M. H. Khan, Geologist of the Geological Survey of Pakistan.

The fossils occur in shales, calcareous shales and impure limestones, which are all much altered and distorted. This makes determination of the fossils difficult.

The faunas are composed mainly of bryozoa, with foraminifera (fusulinids), crinoid stems and poorly preserved brachiopods, corals, gastropods and possibly pelecypods.

The bryozoa are particularly abundant at Locality 1, from where fossils collected by Hayden, have been described by Reed (1925, p.95 - "Locality III - Yasin Valley").

Unfortunately Reed's examination was not very detailed and a comparison with his descriptions and figures is difficult.

FAUNAS.

Locality 1.

Fistulipora yasinensis Reed(1925 (p.96, pl.1, fig. 13-15)
Batstomella sp. (= Ascopora cf. Trautscholdi of Reed 1925, p.99)
Fenestella sp. A.
Polypora? darkotensis (Reed) (1925), p.99, pl.10, fig. 4)
Rhombopora cf. lepidodendroides Meek. (1872, p.141, pl.7, fig. 2a-f).
Ascopora sp. (= Ascopora cf. nodosa of Reed (1925, p. 98, pl. 1, fig. 22).
Thamniscus ? sp.
Acanthocladia ? sp.
Crinoidea gen. ind.
Brachiopoda gen. ind.
Orthotetidae gen. ind.
Euomphalus cf. parvus Waagen (1880, p. 89, pl. 9)
Hyolithidae gen. et. sp.

Locality 2.

Fenestella sp. B.
Rhombopora cf. lepidodendroides Meek
Crinoidea gen. ind.
Rugosa gen. A, sp.
Productidea gen. et. sp.

Locality 3.

Fusulinidea gen. et sp.
Fenestella sp. C.

Streblotrypa ? sp.
Rugosa gen. B, sp.
Orthotetidae gen. ind.
Pelecypoda ? gen. ind.

COMPARISON OF FAUNAS.

Locality 1.

Fistulipora yasinensis Reed (loc. cit. p.1) in the size and shape of its zooecia and in the arrangement of its zooecia bears closest relationship, as stated by Reed, to F.expansa (Waagen & Wenzel) (1886. p.921, pl.104, fig.5, 6 & 8) of the Middle Productus Limestone and the lowermost Upper Productus Limestone of the Salt Range of Punjab.

Batostomella sp. shows closest relationship to Batostomella columnaris ramosa multigemmata (Waagen & Wenzel) (1886, p. 883, pl. 112, fig. 2 a-b, pl. 113, fig. 2-4). The occurrence of Waagen and Wenzel's specimens are not known, although it is probably in the Middle or Upper Productus Limestone.

Asconora sp. - It has not been possible to make a close comparison of this species with any other. Reed has compared it to A. nodosa (Fischer) (Trautschold, 1876, p. 368, pl. 38, fig. 4-6). However it differs considerably in the shape of the cross section and, in a transverse microscopic section, the zooecial tubes are arranged differently. Superficially it is similar.

Rhombopora cf. lepidodendroides Meek (loc. cit. p.1). It has not been possible to compare these specimens with figures or specimens of Meek's material. In North America this species has been reported in rock of Upper Carboniferous and Permian age. Probably the Yasin specimens represent another species, as it would be unusual for members of the same species of Bryozoa to occur at such widely separated places.

Fenestella sp. A.Khan considered three species of Fenestella were present in the material from Locality 1. However there seems to be no constant differences that could not be explained by variation and distortion. In the dimensions of the network, F. sp. A. differs from F. aff. lahuseni Reed (1925, p.20, pl. 11, fig. 4-5a) and more closely resembles F. lahuseni Stuckenburg (1895, p. 148, pl.21, fig. 14) from the Kolwa River of the Urals. The Kolwa River form is stated by Branson (1948, p.243) to be of Artinskian age. F.sp. A. also has affinities with F.basleoensis Bassler (1929, p. 74, pl. 16, figs. 5-9) from the Basleo Beds of Timor.

Polypora? darkotensis (Reed) (loc. cit. p.1). Specimens in this collection resemble Polypora darkotensis Reed in all respects except the arrangement of the zooecial pores. The specimens collected by Mr. Traves seem to have only two rows of pores which extend onto the dissepiments giving the appearance of a greater number of rows. Reed describes 4-6 rows of zooecial pores.

Euomphalus cf. parvus Waagen (loc. cit. p.1) in its shape and dimensions), resembles E.parvus Waagen from the Middle Productus Limestone.

Locality 2.

Fenestella sp. B. This species differs considerably from species occurring at Localities 1 & 3. Its preservation is poor.

Rhombopora cf. lepidodendroides Meek (loc.cit. p.1). Possibly this represents the species which occurs at Locality 1.

In both localities the preservation is poor and recrystallization of the calcium carbonate has taken place so that the details of the internal structure are not visible. The specimens from Locality 1, are slightly smaller but the size and arrangement of the zooecia is similar in both cases. The species is very abundant on specimen No. 121.

The productid is a large one with the shell crushed and the cardinal area obscure.

A single specimen of a coral is also crushed.

Locality 3.

Fenestella sp. C. As indicated by Khan this species has affinities with the specimens described by Waagen & Pichl under the name F.perelegans Meek (1885, p.777, pl. 87, fig. 1-3) from the Middle Productus Limestone of the Salt Range. No pores are present in the Hunza specimens, but in the size and shape of its network it seems to resemble more closely the specimens described by Stuckenburg (1895, p.146, pl.21, fig. 11) as Floculata McCoy from the Ufa River of the Urals, said by Stuckenburg to be of Upper Carboniferous age but probably of Permian. The species also resembles F.parviusculus Bassler (1929, p. 76, pl.17, fig. 8-13) from the Bitauni and Basleo Beds of Timor.

Streblotrypa? sp. In this species numerous mesopores are present which open onto the surface. Diaphragms occur in the zooecial tubes and the outer tubes running vertically are enclosed in laminated tissue. Unfortunately no external surface present is satisfactory for determination.

The single brachial valve of an Orthotetid brachiopod apparently belongs to the same species as the single brachial valve occurring at Locality 1.

CONCLUSIONS.

The collections made at the three localities were not exhaustive and the exact relationships of the three faunas are not clear.

common. Locality 1 and 2 possibly have a long ranging species in/Locality 1 and 3 possibly have another species in common. No forms occur in common at Locality 2 and 3.

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The fauna of Locality 1 is closely related to/the Artinsk beds of the Urals, the Middle Productus Limestone of the Punjab and the Basleo beds of Timor. This relationship shows the age of these beds is towards the top of the Lower Permian. The Lower Permian is taken to extend from the Sakmarian to the Kungurian and the Upper Permian from the Kangurian upwards (Williams, 1938, p. 774, Dunbar, 1940).

The beds of Locality 3 are also Lower Permian but probably a little older, especially as one form shows relationship with a species occurring in the Bitauni beds of Timor which are regarded of Lower Artinsk age.

It is not possible to determine the age of the beds of Locality 2, except to state they may be of Upper Carboniferous or Lower Permian.

This determination is in agreement with Reed (1944, p.375) who suggests that the fauna from Baroghil Ailak, Chitral, is Permian, although previously in 1923 when he correlated it with the Yasin fauna, he considered it to be of Upper Carboniferous age.

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